



# SL52C THRU SL510C

Reverse Voltage - 20 to 100 Volts Forward Current - 5.0 Ampere

## LOW FORWARD VOLTAGE SCHOTTKY BARRIER DIODES

### Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Metal silicon junction, majority carrier conduction
- ◆ Low power loss, high efficiency
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed:  
260°C/10 seconds at terminals

### Mechanical Data

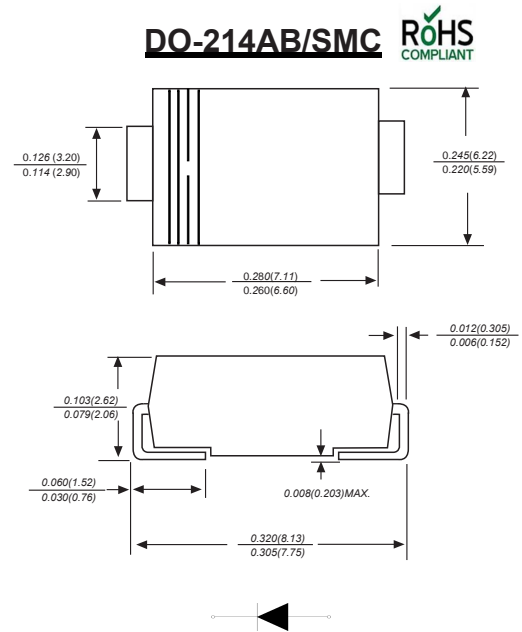
**Case** : JEDEC DO-214AB/SMC Molded plastic body

**Terminals** : Solder plated, solderable per MIL-STD-750, Method 2026

**Polarity** : Polarity symbol marking on body

**Mounting Position** : Any

**Weight** : 0.002ounce, 0.055 grams



Dimensions in inches and (millimeters)

### Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

| Parameter   | SYMBOLS         | SL52C       | SL53C     | SL54C     | SL55C     | SL56C     | SL58C       | SL510C     | UNITS                     |
|---|-----------------|-------------|-----------|-----------|-----------|-----------|-------------|------------|---------------------------|
|   |                 | MDD SL52C   | MDD SL53C | MDD SL54C | MDD SL55C | MDD SL56C | MDD SL58C   | MDD SL510C |                           |
| Maximum repetitive peak reverse voltage   | $V_{RMM}$       | 20          | 30        | 40        | 50        | 60        | 80          | 100        | V                         |
| Maximum RMS voltage   | $V_{RMS}$       | 14          | 21        | 28        | 35        | 42        | 56          | 70         | V                         |
| Maximum DC blocking voltage   | $V_{DC}$        | 20          | 30        | 40        | 50        | 60        | 80          | 100        | V                         |
| Maximum average forward rectified current at $T_L=90^\circ\text{C}$   | $I_{(AV)}$      | 5.0         |           |           |           |           |             |            | A                         |
| Peak forward surge current<br>8.3ms single half sine-wave<br>superimposed on rated load (JEDEC Method)          | $I_{FSM}$       | 120         |           |           |           |           |             |            | A                         |
| Maximum instantaneous forward voltage at 5.0A   | $V_F$           | 0.45        |           |           | 0.50      |           | 0.70        |            | V                         |
| Maximum DC reverse current<br>$T_A=25^\circ\text{C}$<br>at rated DC blocking voltage<br>$T_A=125^\circ\text{C}$ | $I_R$           | 0.5<br>20.0 |           |           |           |           | 0.2<br>10.0 |            | $\mu\text{A}$             |
| Typical junction capacitance (NOTE 2)   | $C_J$           | 200         |           |           |           |           |             |            | pF                        |
| Typical thermal resistance (NOTE 3)   | $R_{\theta JA}$ | 55.0        |           |           |           |           |             |            | $^\circ\text{C}/\text{W}$ |
| Operating junction and storage temperature range  | $T_J, T_{STG}$  | -55 to +150 |           |           |           |           |             |            | $^\circ\text{C}$          |

- Note:** 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
2. P.C.B. mounted with 2.0x2.0" (5.0x5.0cm) copper pad areas.  
3. The typical data above is for reference only.



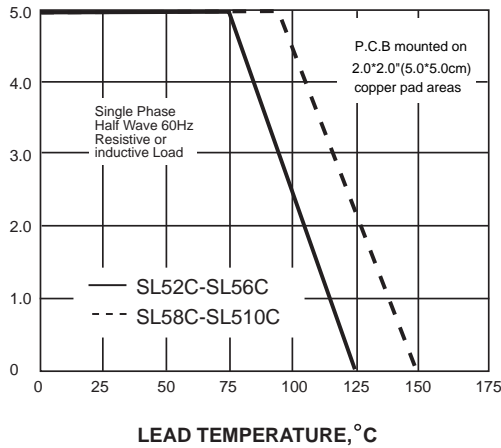
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## Ratings And Characteristic Curves

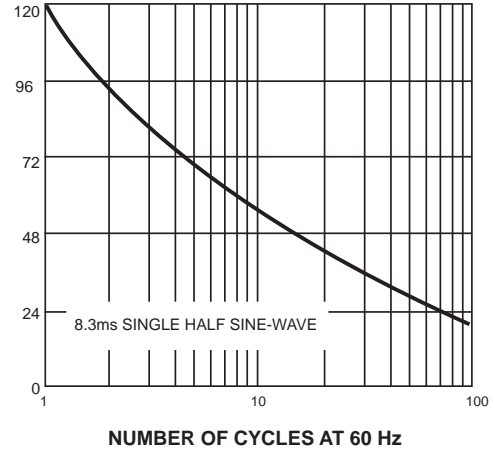
AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



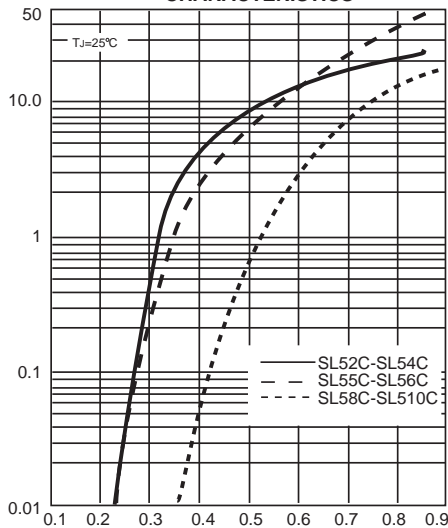
PEAK FORWARD SURGE CURRENT, AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



INSTANTANEOUS FORWARD CURRENT, AMPERES

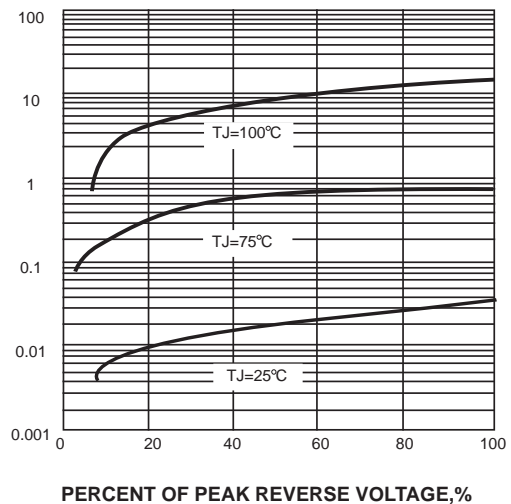
FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS FORWARD VOLTAGE, VOLTS

INSTANTANEOUS REVERSE CURRENT, MILLIAMPERES

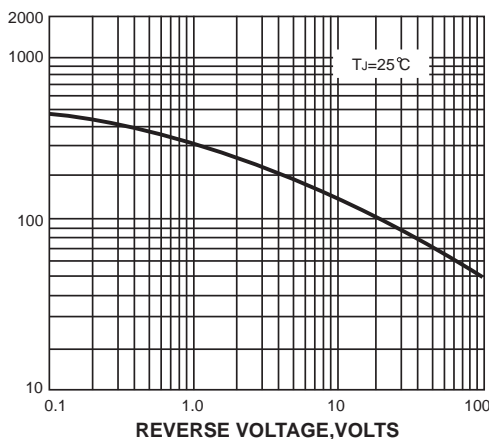
FIG. 4-TYPICAL REVERSE CHARACTERISTICS



PERCENT OF PEAK REVERSE VOLTAGE, %

JUNCTION CAPACITANCE, pF

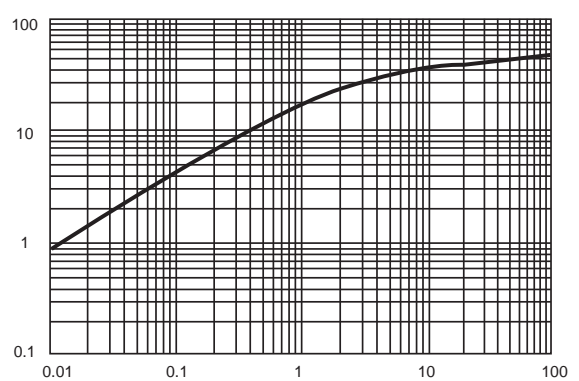
FIG. 5-TYPICAL JUNCTION CAPACITANCE



REVERSE VOLTAGE, VOLTS

TRANSIENT THERMAL IMPEDANCE, °C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



t, PULSE DURATION, sec.

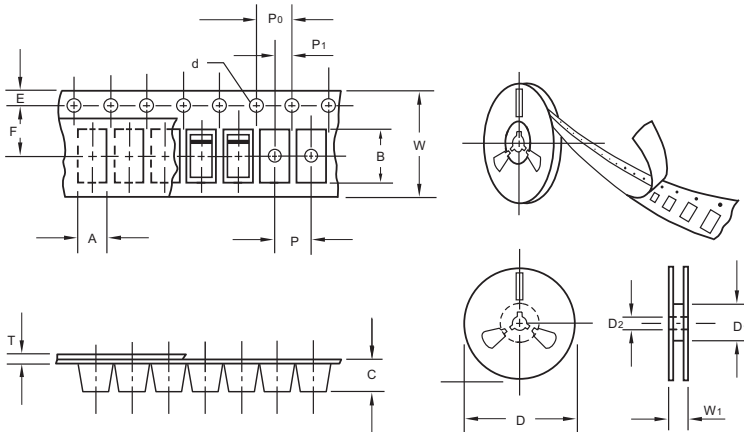
The curve above is for reference only.



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## Packing information



unit:mm

| Item                      | Symbol | Tolerance | SMC    |
|---------------------------|--------|-----------|--------|
| Carrier width             | A      | 0.1       | 6.15   |
| Carrier length            | B      | 0.1       | 8.41   |
| Carrier depth             | C      | 0.1       | 2.42   |
| Sprocket hole             | d      | 0.05      | 1.50   |
| 13" Reel outside diameter | D      | 2.0       | 330.00 |
| 13" Reel inner diameter   | D1     | min       | 50.00  |
| Feed hole diameter        | D2     | 0.5       | 13.00  |
| Sprocket hole position    | E      | 0.1       | 1.75   |
| Punch hole position       | F      | 0.1       | 7.50   |
| Punch hole pitch          | P      | 0.1       | 8.00   |
| Sprocket hole pitch       | P0     | 0.1       | 4.00   |
| Embossment center         | P1     | 0.1       | 2.00   |
| Overall tape thickness    | T      | 0.1       | 0.25   |
| Tape width                | W      | 0.3       | 16.00  |
| Reel width                | W1     | 1.0       | 16.50  |

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

## Reel packing

| PACKAGE | REEL SIZE | REEL (pcs) | COMPONENT SPACING (mm) | BOX (pcs) | INNER BOX (mm) | REEL DIA, (mm) | CARTON SIZE (mm) | CARTON (pcs) | APPROX. GROSS WEIGHT (kg) |
|---------|-----------|------------|------------------------|-----------|----------------|----------------|------------------|--------------|---------------------------|
| SMC     | 13"       | 3,000      | 4.0                    | 6000      | 190*190*41     | 330            | 365*365*340      | 42000        | 14.0                      |

## Suggested Pad Layout



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A      | 4.3       | 0.170       |
| B      | 4.1       | 0.160       |
| C      | 7.9       | 0.311       |
| D      | 3.8       | 0.150       |
| E      | 12        | 0.472       |

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